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# **The relationship between personality traits, self-report conscientiousness the Conscientiousness Index and academic performance in undergraduate medical students**

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## **Background and Purpose**

Personality traits are now accepted as being important factors within the workplace and medical education<sup>1,2</sup>. Both cognitive ability and conscientiousness have been shown as important predictors of work-related performance within organisational research<sup>1</sup>. Conscientiousness is an important trait within any career, but in particular within medicine where a lack of diligence can be disastrous and potentially cost lives. Within undergraduate students, objective measurement of conscientiousness is important since conscientious students are more likely to set and achieve goals<sup>3</sup>. Durham University utilises the Conscientiousness Index (CI) as an objective scalar measure of conscientiousness<sup>4</sup>. The CI has previously been validated against staff and peer views of student professionalism<sup>4,5</sup>. This study aimed to investigate the relationships between the Big Five personality domains (including the 6 sub-facets of conscientiousness), Conscientiousness Index scores and academic performance in medical students in order to determine whether self-report conscientiousness correlates with the Conscientiousness Index and whether a relationship with academic performance exists.

## **Methodology**

First and second year medical students (n=176) completed a NEO IP-R personality inventory. This provided self-report data for each student across the Big 5 personality domains (Openness, Conscientiousness, Extraversion, Agreeableness and Neuroticism). Students also completed an inventory for the 6 sub-facets of conscientiousness. Student scores were calculated for each domain and sub-facet; these were correlated with Conscientiousness Index scores and academic performance (exam data). Confirmatory and exploratory factor analysis were utilised to check for cross-loading between factors on the NEO inventory.

## **Results**

There was a highly statistically significant correlation between conscientiousness index scores and self-report conscientiousness using NEO ( $p < 0.0001$ ). The relationship between agreeableness (NEO) and CI scores was also statistically significant ( $p = 0.03$ ). There was no relationship between CI scores and the traits of extraversion, openness and neuroticism. Five of the six sub-facets of conscientiousness correlated with the CI. Data demonstrating the relationship between academic performance, the CI and personality will also be presented.

## **Discussion and Conclusions**

This study demonstrates that the Conscientiousness Index has concurrent validity against the previously validated NEO IP-R. We provide further evidence on conscientiousness and the use of the CI as an objective scalar measure of professionalism which may help guide selection for future healthservice employers. An understanding of the level of

conscientiousness of the medical workforce, present or future, is important because individuals bring their pre-existing personality traits into the workplace<sup>3</sup>. We will discuss the relationship in our data between cognitive ability and conscientiousness which have previously been shown as important predictors of work-related performance.

## References

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